African fresh-water algae.—The fresh-water algae collected by the third Tanganyika Expedition (1904–5), under Dr. W. A. CUNNINGTON, have been reported by G. S. WEST.[15] The collections were extensive and consisted largely of plankton obtained from the three great lakes (Nyasa, Victoria Nyanza, and Tanganyika). Some material was collected in swamps and swampy pools, and some of the most interesting algae were obtained from among the finely divided leaves of certain utricularias. The phytoplankton is first presented, and is peculiar in the absence of many genera which are a dominant feature of the European lake plankton. A table shows all the species observed in these African plankton collections, and this is followed by a discussion of the peculiarities of the plankton of each lake. The bulk of the report consists of the systematic account of the algae. The absence of Stigonemaceae is referred to as remarkable, Nostochopsis being the only representative of the family. Species of Hapalosiphon are of general occurrence in swamps and marshes, as well as certain bog-loving and rupestral species of Stigonema. The list of new forms includes 18 varieties, 36 species, and a new genus (*Sphinctosiphon*) of Palmellaceae. The total number of species is 372 (105 genera), and 122 of the 187 Chlorophyceae are Conjugales.

Certain conclusions are as follows: The algal flora of Tanganyika differs very much from that of the other lakes, but its peculiarities could be accounted for by prolonged isolation. The algae of Tanganyika showing marine affinities may have been produced by a gradual increase in the salinity of the water over an extended period. The relatively small proportion of Chlorophyceae in the plankton, as well as the large proportion of Bacillarieae and Myxophyceae (Cyanophyceae), is also an indication that the water of the lake was at one time more saline. In large bodies of fresh water, a single example of plankton from a given locality must not be regarded as representative of the plankton of the entire lake.—J. M. C.

California peach blight.—RALPH E. SMITH describes this disease as occurring in practically every part of California where peaches grow.[16] It was first recorded in 1900 by PIERCE and has since increased largely. All varieties are affected. The buds and fruiting twigs die, the green twigs become spotted, and the leaves and fruit drop off. Gum exudes copiously, especially in wet weather, over the one-year-old fruiting twigs. Twigs which were sound and healthy in December were found to be spotted by the first of February. Spraying with Bordeaux mixture at the usual time was not effective, but spraying in December proved efficient, and the ordinary Bordeaux of the 5-5-50 strength of the lime-sulfur-salt mixture is recommended.

The fungus is referred to *Coryneum beyerinkii*. The mycelium produces spots on the leaves and shoots in winter and spore pustules near the center of these spots. Affected leaf tissue soon drops out, giving rise to "shot-holes." Conidia

[15] WEST, G. S., Report on the fresh-water algae, including phytoplankton, of the third Tanganyika Expedition conducted by Dr. W. A. CUNNINGTON, 1904–5. Jour. Linn. Soc. Bot. 39:81–197. *pls. 2–10.* 1907.

[16] Agr. Exper. Sta. Calif., Bull. 191. Sept. 1907.

are abundant upon leaf scars and twigs. The life-history is summed up as follows:

The spores, scattered profusely over the limbs, germinate as soon as enough rain has fallen to wet them up thoroughly, usually in December or January. Spores lying on the green bark of new shoots penetrate the tissue and cause the characteristic spotting. Spores lying about the bud scales produce a mycelium which penetrates and kills outright both the bud and quite an area of surrounding bark, the spot extending from one-fourth to one inch in length. On the spots spore pustules are developed.

The fungus was cultivated in beef agar, in ordinary agar, and on sterilized peach twigs. The colonies are black with distinct zonal arrangement of conidia. No indication of an ascigerous stage was found.—F. L. STEVENS.

Fungus diseases of sugar cane.—BUTLER [17] has given an account of the fungi attacking sugar cane in Bengal. The most serious disease seems to be caused by *Colletotrichum falcatum* Went., which causes a rot of the stalks that spreads from the base upward. In the early stages of the disease the fungus greatly reduces the sugar-content of the cane. With the disappearance of the cane sugar there is a simultaneous increase of glucose. This is attributed to the inverting action of the fungus, and by proper flask experiments it was shown that the fungus has the power of inverting cane sugar. All parts of the cane are attacked by the fungus. On the stem it is often accompanied by a form of Melanconium (*Trichosphaeria Sacchari*), which was once regarded as the cause of the most destructive cane disease of the West Indies, namely the "rind disease." BUTLER believes, however, that the Melanconium is only an accompanying fungus and that *Colletotrichum falcatum* is possibly the cause of the famous "rind disease."

A number of other fungi are more briefly described. *Ustilago Sacchari* Rabenh. transforms the growing axis into a long spore sac. *Diplodia cacaoicola* (P. Henn.), which was originally found on *Theobroma cacao*, is said also to attack the stems of cane. *Cytospora Sacchari* Butl. is described as a new species also found on the stems of cane. *Thielaviopsis ethaceticus* Went. is the cause of the "pine-apple" disease of the young sets, while *Sphaeronema adiposum* Butl. somewhat resembles the latter in its effects. The most serious leaf diseases are the brown leaf spot caused by *Cercospora longipes* Butl., described as a new species, and the well-known ring-spot, found everywhere on cane leaves in the tropics and caused by *Leptosphaeria Sacchari* Br. & H.—H. HASSELBRING.

Cyanogenesis in plants.—TREUB returns to a discussion of the origin and distribution of hydrocyanic acid.[18] Incidentally he adds in one of his tables to the list of plants in which HCN has been found (as given by GRESHOFF at the York meeting of the B. A. A. S.) six genera and sixteen species. HCN as a rule, in hot countries at least, disappears from the leaves before their fall, the contrary

[17] BUTLER, E. J., Fungus diseases of sugar cane in Bengal. Mem. Dept. Agric. India Bot. **1**: no. 3. pp. 53. *pls. 11.* 1906.

[18] TREUB, M., Nouvelles recherches sur la rôle de l'acide cyanhydrique dans les plantes vertes, II. Ann. Jard. Bot. Buitenzorg **21**: 79–106. *pls. 1, 2.* 1907.